Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-7 (Canceled)

8. (Currently amended) A transgenic mouse whose genome comprises a null endogenous ~~comprising a homozygous disruption in a~~ cGMP phosphodiesterase alpha subunit allele~~gene wherein said mouse lacks production of functional cGMP phosphodiesterase alpha subunit protein and exhibits a phenotype comprising an eye abnormality~~.
9. (Previously presented) A cell obtained from the mouse of claim 8.
10. (Currently amended) A method of producing the~~a~~ transgenic mouse of claim 8~~comprising a homozygous disruption in a cGMP phosphodiesterase alpha subunit gene~~, the method comprising:
    (a) introducing ~~the~~ a targeting construct capable of disrupting the comprising the cGMP phosphodiesterase alpha subunit allele~~of claim 1~~ into a mouse embryonic stem cell;
    (b) selecting for the mouse embryonic stem cell which has undergone homologous recombination;
    (c) introducing the cell selected for in step (b) into a blastocyst;
    (d) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said mouse gives birth to a chimeric mouse; and
    (e) breeding the chimeric mouse to produce the transgenic mouse~~, wherein the transgenic mouse lacks production of functional cGMP phosphodiesterase alpha subunit protein and comprises a phenotype comprising an eye abnormality or hyperactive behavior~~.
11. (Currently amended) A method of identifying an agent that ameliorates an abnormality associated with a ~~homozygous~~ disruption in a cGMP phosphodiesterase gene, the method comprising:
    (a) providing ~~a~~ the transgenic mouse of claim 8~~comprising a homozygous disruption in a cGMP phosphodiesterase alpha subunit gene, wherein the mouse lacks production of functional cGMP phosphodiesterase alpha subunit protein and exhibits a phenotype comprising an eye abnormality~~; ~~and~~
    (b) administering an agent to the transgenic mouse; and

(c) determining whether the ~~eye~~ abnormality of the transgenic mouse is ameliorated.

Claims 12-16 (Canceled)

17. (Currently amended) The transgenic mouse of claim ~~8~~54, wherein said the eye abnormality is a retinal abnormality.

18. (Previously presented) The transgenic mouse of claim 17, wherein the retinal abnormality is characterized by retinal degeneration or retinal dysplasia.

19. (Previously presented) The transgenic mouse of claim 18, wherein the transgenic mouse exhibits an absence of photoreceptor layers.

20. (Currently amended) The transgenic mouse of claim ~~8~~54, wherein the eye abnormality is consistent with vision problems or blindness.

21. (Currently amended) The transgenic mouse of claim ~~18~~17, wherein the retinal abnormality is consistent with retinitis pigmentosa.

22. (Currently amended) The transgenic mouse of claim ~~8~~54, wherein the eye abnormality comprises at least one of the following: thinning or vacuolation of the inner nuclear layer of the eye; thinning of the inner plexiform layer of the eye; loss of ganglion cell nuclei; gliosis of the nerve fiber layer; or attenuation of retinal vasculature.

Claims 23-48 (Canceled)

49. (New) The transgenic mouse of claim 8 wherein said mouse is heterozygous for said null allele.

50. (New) The transgenic mouse of claim 8 wherein said mouse is homozygous for said null allele.

51. (New) The transgenic mouse of claim 8 wherein said null allele comprises a gene encoding a selection marker.

52. (New) The transgenic mouse of claim 51 wherein said gene is a *neo*^{r} gene.

53. (New) The transgenic mouse of claim 52 wherein said null allele further comprises a *lacZ* gene.

54. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, an eye abnormality.

55. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, adventitia or inflammation of the aorta.

56. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, tubular dilation or pyelitis of the kidney.
57. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, extramedullary hematopoiesis of the liver.
58. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, lymphoid hyperplasia, lymphoid atrophy, or hemorrhage of the lymph nodes.
59. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, dermatitis.
60. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, increased body weights, increased body length or increased body weight to body length ratio.
61. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, increased spleen and thymus gland, kidney or liver weights.
62. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, elevated levels of alanine aminotransferase, phosphorus, potassium or bilirubin.
63. (New) The transgenic mouse of claim 50 wherein said mouse exhibits, relative to a wild-type control mouse, significantly increased activity, traveling a much greater total distance and exploring the open field more in the open field test.
64. (New) The transgenic mouse of claim 63 wherein said increased activity is an indication of hyperactivity.
65. (New) The transgenic mouse of claim 49 wherein said mouse exhibits, relative to a wild-type control mouse, eye discoloration including pink eyes.
66. (New) A method of identifying an agent capable of modulating activity of the cGMP phosphodiesterase gene or expression product, the method comprising:
    (a) administering an agent to the transgenic mouse of claim 8;
    (b) administering the agent to a wild-type control mouse; and
    (c) comparing a physiological response of the transgenic mouse with that of the control mouse;

wherein a difference in the physiological response between the transgenic mouse and the control mouse is an indication that the agent is capable of modulating activity of the gene or gene expression product.